Outline

Motivation  |  High quality curriculum development
Background  |  Body of Knowledge
Survey      |  Rating of GIS&T competences
Results     |  Differentiation by organization type, EQF level
Open Issues |  Technological trends vs. GI principles
BoK for Curriculum Development

Conceptual Foundations

Up-to-date dynamic GIS&T Body of Knowledge (BoK)

Practical Skills

Market demands

Developments and Trends
GIS&T Body of Knowledge

- Conceptual foundations
- Analytical methods
- Cartography and Vis.
- Design aspects
- Geocomputation
- Data modeling
- Geospatial data
- Data manipulation
- GIS&T and society
- Org. and inst. issues

Hierarchical structure: knowledge areas > units > topics
Assessment of Workforce Demand

European-wide online survey on workforce demand

- Target group: GIS&T professionals
  - Organizational type
  - Level of education (European qualification framework EQF)

Survey structure

- Frequently performed tasks (three keywords)
- Rating of BoK knowledge areas: How important have the following competences been in your professional work during the last 3 years?
- Competences important in future (three keywords)
Survey Participation Throughout Europe

Survey participation:
435 questionnaires
33 countries
Rating of Knowledge Areas

- Analytical Methods
- Conceptual Foundations
- Cartography and Visualisation
- Design Aspects
- Data Modelling
- Data Manipulation
- Geocomputation
- Geospatial Data
- GIS&T and Society
- Organisational & Institutional Issues
**Geocomputation – The Subjects**

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- Advanced mathematical concepts
- Techniques from neighboring disciplines
- Use in practice apparently limited
Current and Future Tasks

Which competences would you like to obtain?

Which competences will gain importance in the future?

Word clouds exclude the terms GIS and data.
Future Trends Identified

Câmara et al. 2009 – Geographical Information Engineering in the 21st Century:

Technology side:

- Sensor networks
- Mobile devices
- Remote sensing

Concepts side:

- Semantics
- Time
- Cognition

- Technology side emphasised from survey participants
- Technology not all that needs advancement
Variation in the GIS&T job market

- ‘no problem to find employees’
- ‘slight oversupply features the market’
- ‘industry needs more good graduates’
- ‘it is difficult to find GIS&T experts’

Three major deficits repeatedly mentioned:

- IT skills
- applying theoretical knowledge to real-world problems
- soft skills: (English) language and team working.
Is there a European GIS&T?
Questions Raised

• Technological skills are on the rise
  – Where are disciplinary limits of GIS&T?
  – Emphasis of spatial principles: GIS and data remain top-listed as future competences

• Impact of KA ratings on updated version of the BoK
  – Workforce demand as major steering wheel?

More to come from GI-N2K... [http://www.gi-n2k.eu/]
References
